Candidates for Preventive Migraine Therapy: Results from the American Migraine Prevalence and Prevention (AMPP) Study

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INTRODUCTION

The prevalence of migraine in the U.S., as well as patterns of acute treatment, are well understood.[1,2] However, less is known about the need for preventive therapy and the current patterns of preventive medication use versus standards of care.

An expert panel comprised of headache specialists, epidemiologists and statisticians with experience in headache research convened several meetings in 2004 and developed recommendations, based on the US Headache Consortium Guidelines, for the use of migraine prevention. Decision rules for the classification of cases based on headache frequency and impairment were reviewed with the objective of identifying operational criteria consistent with consensus guidelines. This work yielded 3 groups: preventive treatment should be offered to all patients with 6+ migraine days per month; 4+ migraine days with at least some impairment; or 3+ migraine days with severe impairment or required bed rest. Preventive treatment should be considered for patients with 4-5 migraine days per month with normal functioning; 2-3 migraine days with some impairment or 2 migraine days with severe impairment.

This study focused on the patterns of preventive therapy need and the use of preventive treatments among migraine sufferers in the U.S. population. It also examined headache related disability among migraineurs where prevention is needed and compares them to migraineurs where prevention is not indicated.

METHODS

In 2004, a validated self-administered headache questionnaire was mailed to a representative sample of U.S. households.

Each household member with severe headache was asked to provide data on headache symptoms and features, headache frequency, acute and preventive medication use, use of coincident prevention (seizure, blood pressure, depression medications), headache related impairment (work/function normally, impaired to some degree, severely impaired, bed rest required) and disability (MIDAS).[3]

A sample of 120,000 households (with a total of N=257,339 individuals age 12+) were selected from the TNS/NFO nationwide panel. This household panel is constructed to be representative of the U.S. population on key demographics (age and gender of household head, household income and size, census region, and population density).

Migraine cases were identified using ICHD-2 symptom criteria for migraine with and without aura.[4] Cases reporting at least one severe headache in the past year were included in the analyses and cases with daily (28+ per month) headaches were excluded.

MIDAS Grade was calculated by summing 5 items that assess number of days in the last 3 months where participation/productivity in work, school, or home activities were impacted due to headache. The distribution of findings for males versus females were compared using chi-square analyses.

RESULTS

A total of 77,879 households (65% response) returned questionnaires. Table 1 provides total sample demographics and response rates.

A total of N=30,721 headache sufferers age 12+ were identified (18.9% of the sample).

There were N=18,968 individuals who met ICHD-2 criteria for migraine yielding a one year period prevalence of 11.7% overall. Prevalence among females was 17.1% and among males 5.6%. Migraine prevalence adjusted for demographics is provided in Figure 1.

Table 1. Sample characteristics and response rates for headache and migraine screening.

	Sampled Individuals (N)	% of Sample	Responding Individuals (N)	Response Rate %
Total	**257,339**		**162,576**	**63%**
Gender				
Males	129,665	49%	77,292	62%
Females	132,674	51%	85,284	64%
Age				
12-17 yrs	23,933	8.0%	13,821	58%
18-29 yrs	45,238	15.1%	22,659	50%
30-39 yrs	42,947	14.3%	22,468	52%
40-49 yrs	47,242	15.7%	28,994	61%
50-59 yrs	41,870	13.9%	29,479	70%
60+ yrs	56,109	18.7%	45,155	80%
Total Headache Cases			30,721	
Total Migraine Cases			18,968	

Figure 1. Age and gender-adjusted prevalence of migraine in the U.S.

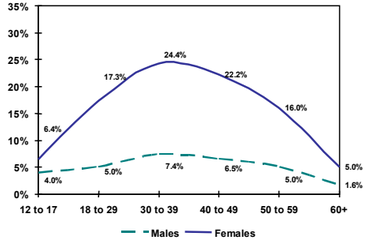


Figure 2. Current preventive medication use: only 13% of migraine cases report current use of migraine specific preventive therapy.

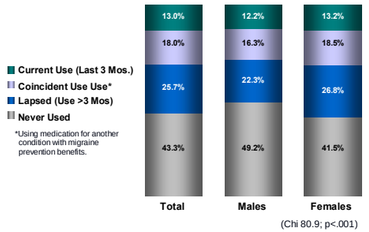


Table 2. Preventive therapy need per expert panel guidelines: nearly 1 in 4 migraine cases could benefit from preventive therapy.

How are you usually affected by severe headaches?	Monthly Migraine Days ≤1	2	3	4-5	6-10	11+	Total
Able to Work/ Function Normally	4.4%	0.6%	0.7%	0.6%	0.5%	0.4%	7.2%
Impaired to Some Degree	22.6%	3.5%	4.4%	3.5%	3.1%	2.0%	39.1%
Severe Impairment Bed Rest Required	33.0%	4.6%	5.2%	4.1%	3.9%	2.9%	53.7%
TOTAL	60.0%	8.8%	10.3%	8.2%	7.8%	4.9%	100% (N=18670)

Offer Preventive Treatment = 25.7%
Consider Preventive Treatment = 13.1%
Not Indicated = 61.3%

Figure 3. MIDAS-based disability by prevention need: over half of the "offer" prevention group reports moderate to severe headache-related disability.

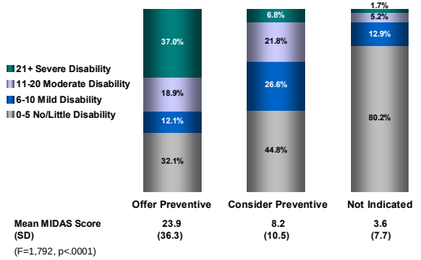


Figure 4. Preventive medication use by prevention need: only 1in 5 (19.6%) prevention candidates are receiving it currently.

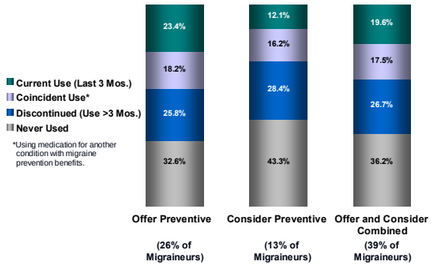
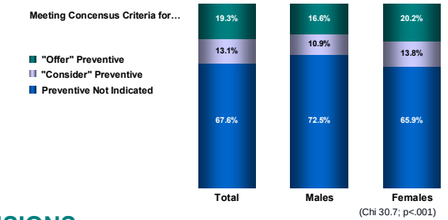


Figure 5. Preventive medication need among those who have never used preventive therapy: 1 in 5 (19.3%) could benefit from prevention; more candidates are female.



CONCLUSIONS

- **This study replicated migraine prevalence findings from prior studies with the highest one-year period prevalence seen in the 30-39 age group for both males and females.**
- **Nearly all migraine sufferers use acute medication to treat headache however only 13.0% currently use migraine-specific preventive treatment.**
- **An additional 18.0% use coincident preventive treatment (medication for another condition with known benefit as a migraine preventive) and 25.7% have discontinued prior preventive treatment. 43.3% have never used preventive treatment.**
- **Males are more likely than females (p<.001) to have never used preventive medication.**
- **Based on headache expert guidelines, 1 in 4 migraineurs are candidates for preventive therapy: 25.7% should be "offered" prevention and another 13.1% should "consider" it.**
- **There is significantly more MIDAS-based disability among those groups with the greatest need for prevention.**
- **Among the 26% of migraine cases in the "offer" group, where prevention is most needed, only one-quarter (23.4%) are currently receiving migraine-specific preventive treatment.**
- **And for the nearly 40% of migraine cases who make up the combined "offer" and "consider" prevention group, only 1 in 5 (19.6%) currently receive migraine specific preventive treatment.**
- **Among migraine cases who never used preventive treatment, 1 in 3 are candidates (19.3% should be offered prevention and 13.1% should consider it). The need for prevention is significantly higher among females vs. males.**
- **Identifying migraine patients who may be candidates for preventive therapy will most likely improve headache outcomes.**

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